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Kurt L. Grossman 4/25/00  
Kurt L. Grossman, Esq., Reg. No. 29,799 Date

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09/558329  
04/25/00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Express Mail: EL508264378US  
Attorney Docket: STAN-09RE  
Date: April 25, 2000

BOX REISSUE  
Assistant Commissioner of Patents  
Washington, D.C. 20231

**REISSUE APPLICATION TRANSMITTAL**

Transmitted herewith is the application for reissue of U.S. Patent No. 5,902,757 issued on May 11, 1999.

Inventors: Randolph A. Stern and Michael N. Byles

Title: STITCH BONDED FABRIC AND FLUID-RETAINING FABRIC MADE THEREWITH

Enclosed are the following:

1. Specification claim(s) and drawing(s)
  - a. 16 page(s) of specification including  
14 page(s) with claims 1 - 87  
  
1 page of abstract
  - b. 2 sheet(s) of drawing  
  
X formal  
       informal

☒ No changes in the drawings upon which the original patent was issued are to be made. Therefore, in accordance with 37 CFR 1.174, please find attached, in the size required for original drawings:

☒ a copy of the printed drawings of the patent.

c. ☒ Request for Transfer of Drawings.

2. Reissue Declaration and Power of Attorney:

☒ Reissue Declaration, Petition and Power of Attorney signed by Randolph A. Stern and Michael N. Byles.

3. Preliminary Amendment

\_\_\_ attached

4. Offer to surrender the original Letters Patent in accordance with 37 CFR 1.178 is attached.

☒ Offer to Surrender signed by Randolph A. Stern and Michael N. Byles.

☒ Executed Assent of Assignee to Reissue and Offer to Surrender

5. Letters Patent

\_\_\_ original Letters Patent attached

\_\_\_ declaration that original Letters Patent lost or inaccessible

6. Information Disclosure Statement

\_\_\_ attached, with copies of cited references.

7. Priority-35 U.S.C. 119

\_\_\_ Priority of application Serial No. \_\_\_\_\_ filed on \_\_\_\_\_ in \_\_\_\_\_ is claimed under 35 U.S.C. 119.

\_\_\_ The certified copy has been filed in the prior application Serial No. \_\_\_\_\_ filed on \_\_\_\_\_.

8. Fee Calculation:

Claims in Patent	For	No. Filed in Reissue Application	Number Extra	Small Entity			Other Than a Small Entity	
				Rate	Fee		Rate	Fee
29	Total Claims	87	58 = (87-29)	x\$9		OR	x\$18	\$1044.00
3	Independent Claims	10	7 = (10-3)	x\$39			x\$78	\$ 546.00
Basic Filing Fee (37 CFR 1.16(h))						OR	\$690.00	
Total Filing Fee							\$2280.00	

9. Small Entity Status

\_\_\_ A verified statement that this filing is by a small entity is attached.

10. Method of Payment of Fees

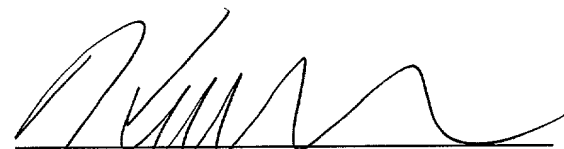
X Check for \$2280.00 for the Filing Fee

X The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 23-3000. A duplicate copy of this sheet is enclosed.

- a) Any additional filing fees required under 37 CFR 1.16; and
- b) Any patent application processing fees under 37 CFR 1.17; and
- c) Any filing fees under 37 CFR 1.16 for presentation of extra claims.

WOOD, HERRON & EVANS, L.L.P.

By:

  
Kurt L. Grossman, Reg. No. 29,799

2700 Carew Tower  
441 Vine Street  
Cincinnati, Ohio 45202  
(513) 241-2324 (voice)  
(513) 421-7169 (fax)

PATENT

Reissue Application No.:

Filed: Herewith

Patent No.: 5,902,757

Granted: May 11, 1999

Inventors: Randolph A. Stern and Michael N. Byles

Title: STITCH BONDED FABRIC AND FLUID-RETAINING  
FABRIC MADE THEREWITH

Cincinnati, Ohio

March 6, 2000

Hon. Commissioner of Patents  
and Trademarks  
Washington, DC 20231

Sir:

ASSENT OF ASSIGNEE TO REISSUE AND OFFER TO SURRENDER

The assignee of the entire interest in the above-mentioned Letters Patent, Standard Textile Co., Inc., hereby assents to the accompanying application for reissue through its undersigned officer and offers to surrender the original Letters Patent No. 5,902,757.

CERTIFICATION BY ASSIGNEE

Standard Textile Co., Inc., certifies that it is the assignee of the entire right, title and interest in and to the above-mentioned Letters Patent and reissue application by virtue of an assignment from Randolph A. Stern and Michael N. Byles to Standard Textile, Co., Inc., recorded at Reel 9117 and Frame 0150 at the U.S. Patent and Trademark Office.

In accordance with 37 C.F.R. 3.73 the assignee hereby certifies that the evidentiary documents with respect to its ownership have been reviewed and that, to the best of the assignee's knowledge and belief, title is in the assignee seeking to take this action.

Standard Textile Co., Inc.

Date March 30, 2000

By: Edward M. Frankel

Name: Edward M. Frankel

Title: Vice President and Chief Administrative  
and Financial Officer

K \STAN\09RE\assent assignee.wpd

# STITCH BONDED FABRIC AND FLUID-RETAINING FABRIC MADE THEREWITH

## BACKGROUND OF THE INVENTION

### I. Field of the Invention

The present invention relates to stitch bonded fabrics, and more particularly, to such fabrics used as fluid-retaining fabrics such as in incontinent products.

### II. Description of Prior Art

Various incontinent pads have been employed such as in hospital settings to retain fluids expelled from the body while also protecting the bed linens therebelow. To this end, a typical incontinent pad has a knit or woven facing fabric layer to which is quilted a felt layer. The facing fabric layer provides a soft, comfortable layer against the patient's skin, and cooperates with the felt layer to hold the large volume of fluid that may be expelled from the patient. The felt layer further provides rigidity to the pad so that it does not crumple up and become uncomfortable under the weight of the patient.

A barrier layer, typically of vinyl or polyurethane with an outer tricot fabric layer, is attached to the felt such as by being stitched to the edge of the quilted layers or by being bonded to the felt with adhesive. To provide for better patient comfort, it is desirable to wick fluids away from the top side of the facing fabric so as to maintain as dry a surface as possible. To this end, one highly desirable facing fabric developed and marketed by Standard Textile Co., Inc., under the mark Comply® is an integral web fabric that provides a hydrophobic upper surface and a hydrophilic lower surface in wicking communication with the upper surface. With that fabric, fluids are wicked away from the face of the fabric and into the hydrophilic, fluid-absorbing lower portion where the fluids may be retained.

While incontinent pads have enjoyed wide-spread success, the manufacture of such pads presents significant cost concerns, especially due to the need to separately manufacture the facing fabric and the felt layer, and to then apply the quilting process to hold those layers together.

## SUMMARY OF THE INVENTION

The present invention provides an improved fluid-retaining fabric such as may be substituted for the facing fabric and felt of the prior incontinent pads and which reduces the costs of manufacture thereof. To this end, and in accordance with principles of the present invention, the fabric of the present invention is provided by stitch bonding a felt web having a hydrophobic upper aspect and a hydrophilic lower aspect, with stitch bonding yarns which in a single process holds the felt web aspects together and also defines top and bottom yarn faces of the fabric formed with the stitch bonding yarns, with the top yarn face presenting the patient comfort surface, and the bottom yarn face providing a surface for adhesive connection to a barrier layer without interfering with either the structural rigidity or absorbency provided by the felt web.

The stitch-bonded fabric of the present invention may be utilized as a fluid-retaining fabric and may be incorporated into an incontinent pad such as by the attachment of a barrier layer to the bottom yarn face.

By virtue of the foregoing, there is thus provided an improved facing fabric that incorporates the advantageous features of a felt layer without the added cost of separate manufacture of the facing fabric and the felt, and without the cost of the still-further quilting process.

## BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and, together with the general description of the invention given above and the detailed description of the embodiments given below, serve to explain the principles of the present invention.

FIG. 1 is a perspective view of one embodiment of a sheet of stitch bonded fabric in accordance with the principles of the present invention;

FIG. 2 is a diagrammatic, partially broken away, cross-sectional view taken along line 2—2 of the fabric of FIG. 1;

FIG. 3 is a close-up, top elevational view of the fabric of FIG. 1;

FIG. 4 is a close-up, bottom elevational view of the fabric of FIG. 1;

FIG. 5 is a view like FIG. 2 showing an alternative embodiment of a stitch bonded fabric in accordance with the principles of the present invention;

FIG. 6 is a partial cross-sectional view of edge stitching of an incontinent pad incorporating the fabric sheet of FIG. 1;

FIG. 7 is a cross-sectional, diagrammatic view of an incontinent pad incorporating the fabric sheet of FIG. 1; and

FIG. 8 is a view like FIG. 2 showing the sheet of FIG. 1 with an interposed scrim layer.

## DETAILED DESCRIPTION OF THE DRAWINGS

With reference to FIGS. 1-4, there is shown one embodiment of a sheet 10 of stitch bonded fabric constructed in accordance with the principles of the present invention. Sheet 10 includes a central felt web 12 having an upper layer or aspect 14 of hydrophobic felt and a lower layer or aspect 16 of hydrophilic felt so as to be fluid retaining relative to upper aspect 14. Layer 14 may be composed of polyester and/or polypropylene and layer 16 may be composed of rayon. Layers 14 and 16 are secured together by a plurality of stitch bonding threads or yarns 18. Felt layers 14, 16 may be two separate, but adjacent layers or may be needle punched together into a single, integral web. In either case, web 12 presents an upper surface 20 defined by the upper side of the first layer 14, and a lower surface 22 defined by the lower side of the second layer 16. The properties of web 12 are such that fluid presented to layer 14 will wick down into layer 16 where it may be retained.

Stitch bonding yarns 18 repeatedly extend through felt web 12 with a plurality of yarn segments 18' extending over or across the upper surface 20 of web 12, and a plurality of yarn segments 18" extending over or across lower surface 22 of web 12. It will be appreciated that yarn segments 18' and 18" do not become embedded into the web 12 below surfaces 20 or 22 thereof, but rather extend across the surfaces 20 and 22, and are of sufficient density that yarn segments 18' cooperate to define a top yarn face 24 of fabric 10 above web upper surface 20, and yarn segments 18" cooperate to define a bottom yarn face 26 of fabric 10 below web lower surface 22. Faces 24 and 26 are effectively continuous such that web 12 is not exposed thereat, although small gaps or interstices (as at 28) between adjacent yarn segments 18' or 18" may allow viewing of felt surface 20 or 22 upon close inspection. It will be noted that FIGS. 3 and 4 are greatly exaggerated to show interstices 28 in faces 24 and 26.

Yarns 18 are knitted in a flat stitch construction across the web upper surface 20 such that yarn segments 18' form

underlaps as at 30 in FIG. 3. Yarn segments 18", on the other hand, form overlaps as at 32 in FIG. 4. The underlaps 30 and overlaps 32 are the result of the usual knit construction provided by stitch bonding such as with existing Malipol-type machines as are known in the art. With such machines, sheet 10 is formed such that top yarn face 24 is at the technical back and bottom yarn face 26 is at the technical face during the knitting process. Yarn 18 may be hydrophobic on hydrophilic, the former assisting in wicking fluid down into lower layer 16 of felt web 12. Yarns 18 may be continuous polymeric filaments of hydrophobic material such as polyester or may be spun yarns of natural hydrophilic material such as cotton, or may be a blend of polymeric and natural materials.

With reference to FIG. 5, an alternative embodiment of stitch bonded fabric 10' is constructed like fabric 10 but with yarns 18 being stitched in a loop knit construction across web upper surface 20 such that yarn segments 18' also define a plurality of loops 36 in the top yarn face 24.

In use, sheet 18 (or 18') may function as a fluid-retaining fabric such that fluid (not shown) at face 24 will pass into web 12 and be wicked from layer 14 into layer 16 of web 12 whereat the fluid is retained. To this end, a barrier layer 40 may be attached to bottom yarn face 26 of the sheet to thus define an incontinent pad 44 or the like as shown in FIGS. 6 and 7. Barrier layer 40 may include a fluid barrier ply 46 such as vinyl or polyurethane. Additionally, layer 40 may include a tricot ply 48 to provide a fabric outer layer to pad 44. Barrier ply 46 may be attached to yarn face 26 by edge-stitching 50 to sheet 18 or may be attached directly to yarn segments 18" of yarn bottom face 26. Alternatively, barrier ply 46 may be adhesively applied to face 26 such as with an adhesive lamination layer 52, depending upon the materials involved and the performance characteristics of the barrier layer 40.

By virtue of the foregoing, there is thus provided a combined facing fabric and felt such as for incontinent products that may be made in one process step to thereby reduce the cost of manufacture thereof.

While the present invention has been illustrated by the description of embodiments thereof, and while the embodiments have been described in considerable detail, it is not intended to restrict or in any way limit the scope of the appended claims to such detail. Additional advantages and modifications will readily appear to those skilled in the art. For example, one or more additional layers such as a hydrophobic scrim 60 (FIG. 8) of remay material may be interposed over (or under) web 12 such as between surface 20 and yarn segments 18' (and/or between surface 22 and yarn segments 18") to provide a protective layer to prevent the non-woven fibers (not shown) of felt web 12 from projecting through yarn face 24 (or 26) created by the stitch bonding yarns 18' (or 18"). The invention in its broader aspects is, therefore, not limited to the specific details, representative apparatus and method, and illustrative examples shown and described. Accordingly, departures may be made from such details without departing from the spirit or scope of the general inventive concept.

Having described the invention, what is claimed is:

1. A stitch bonded facing fabric comprising:
  - a first layer of hydrophobic felt;
  - a second layer of hydrophilic felt being adjacent to the first layer so as to define a felt web having an upper surface defined by an upper side of the first layer and a lower surface defined by a lower side of the second layer; and



- 5 a plurality of stitch bonding yarns repeatedly extending through the felt web with yarn segments extending across both the upper and lower surfaces of the felt web such that the yarn segments extending across the felt web upper surface cooperate to form a top yarn face above the felt web upper surface and the yarn segments extending across the felt web lower surface cooperate to form a bottom yarn face below the felt web lower surface.
- 10 2. The stitch bonded fabric of claim 1 further comprising a scrim layer interposed between one of the surfaces of the felt web and the yarn segments extending thereacross.
3. The facing fabric of claim 1 wherein the yarn segments extending across the felt web upper surface form underlaps.
- 15 4. The facing fabric of claim 3 wherein the yarn segments extending across the felt web lower surface form overlaps.
5. The facing fabric of claim 1 wherein the yarn segments extending across the felt web lower surface form overlaps.
- 20 6. The facing fabric of claim 1 wherein the yarns are stitched in a flat stitch construction across the felt web upper surface.
7. The facing fabric of claim 1 wherein the yarns are stitched in a loop knit construction across the felt web upper surface to define a plurality of yarn loops in the top yarn face.
- 25 8. The facing fabric of claim 1 wherein the yarns are hydrophobic.
9. The facing fabric of claim 1 wherein the yarns are hydrophilic.
- 30 10. The facing fabric of claim 1 wherein the yarns are continuous filaments.
11. The facing fabric of claim 1 wherein the yarns are spun yarn.
12. A stitch bonded facing fabric comprising:
- 35 a felt web having a hydrophobic upper aspect extending from an upper surface of the web and a hydrophilic lower aspect extending from a lower surface of the web; and
- 40 a plurality of stitch bonding yarns repeatedly extending through the felt web with yarn segments extending across both the upper and lower surfaces of the felt web such that the yarn segments extending across the felt web upper surface cooperate to form a top yarn face above the felt web upper surface and the yarn segments
- 45 extending across the felt web lower surface cooperate to form a bottom yarn face below the felt web lower surface.
13. The stitch bonded fabric of claim 12 further comprising a scrim layer interposed between one of the surfaces of the felt web and the yarn segments extending thereacross.
- 50 14. The facing fabric of claim 12 wherein the yarn segments extending across the felt web upper surface form underlaps.
15. The facing fabric of claim 14 wherein the yarn segments extending across the felt web lower surface form overlaps.
- 55 16. The facing fabric of claim 12 wherein the yarn segments extending across the felt web lower surface form overlaps.
- 60 17. The facing fabric of claim 12 wherein the yarns are stitched in a flat stitch construction across the felt web upper surface.
18. The facing fabric of claim 12 wherein the yarns are stitched in a loop knit construction across the felt web upper surface to define a plurality of yarn loops in the fabric top.
- 65 19. The facing fabric of claim 12 wherein the yarns are hydrophobic.

20. The facing fabric of claim 12 wherein the yarns are hydrophilic.

21. The facing fabric of claim 12 wherein the yarns are continuous filaments.

22. The facing fabric of claim 12 wherein the yarns are spun yarn. 5

23. A fluid-retaining fabric comprising:

a stitch bonded facing fabric having a first layer of hydrophobic felt, a second layer of hydrophilic felt being adjacent to the first layer so as to define a felt web 10 having an upper surface defined by an upper side of the first layer and a lower surface defined by a lower side of the second layer, and a plurality of stitch bonding yarns repeatedly extending through the felt web with yarn segments extending across both the upper and 15 lower surfaces of the felt web such that the yarn segments extending across the felt web upper surface cooperate to form a top yarn face above the felt web upper surface and the yarn segments extending across

the felt web lower surface cooperate to form a bottom yarn face below the felt web lower surface; and

a barrier layer attached to the bottom yarn face.

24. The fluid-retaining fabric of claim 23 further comprising adhesive attaching the barrier layer to the bottom yarn face.

25. The fluid-retaining fabric of claim 23 wherein the first and second felt layers are needle punched into a single felt web.

26. The fluid-retaining fabric of claim 23 wherein the barrier layer includes a fluid barrier ply and a fabric ply.

27. The fluid-retaining fabric of claim 26 wherein the barrier ply is attached to the bottom yarn face.

28. The fluid-retaining fabric of claim 23 wherein the barrier layer includes a fluid barrier ply.

29. The fluid-retaining fabric of claim 23 further comprising edge stitching attaching the barrier layer to the bottom yarn face.

\* \* \* \* \*

30. A stitch bonded facing fabric comprising:

a felt web having an upper surface and a lower surface; and

a plurality of stitch bonding yarns repeatedly extending though the felt web with yarn segments extending across both the upper and lower surfaces of the felt web such that the yarn segments extending across the felt web upper surface cooperate to form a top yarn face above the felt web upper surface and the yarn segments extending across the felt web lower surface cooperate to form a bottom yarn face below the felt web lower surface.

31. The stitch bonded facing fabric of claim 30 further comprising a scrim layer interposed between one of the surfaces of the felt web and the yarn segments extending thereacross.

32. The stitch bonded facing fabric of claim 30 wherein the yarn segments extending across the felt web upper surface form underlaps.

33. The stitch bonded facing fabric of claim 32 wherein the yarn segments extending across the felt web lower surface form overlaps.

34. The stitch bonded facing fabric of claim 30 wherein the yarn segments extending across the felt web lower surface form overlaps.

35. The stitch bonded facing fabric of claim 30 wherein the yarns are stitched in a flat stitch construction across the felt web upper surface.

36. The stitch bonded facing fabric of claim 30 wherein the yarns are stitched in a loop knit construction across the felt web upper surface to define a plurality of yarn loops in the fabric top.

37. The stitch bonded facing fabric of claim 30, the felt web including first and second felt layers being adjacent to one another to define the felt web, the upper surface of the web being defined by an upper side of the first felt layer, the lower surface of the web being defined by a lower side of the second felt layer, the stitch bonded yarns extending through both felt layers.

38. The stitch bonded facing fabric of claim 30 wherein the yarns are hydrophilic.

39. An incontinent pad comprising:

a stitch bonded facing fabric having a felt web having an upper surface and a lower surface and a plurality of stitch bonding yarns repeatedly extending though the felt web with yarn segments extending across both the upper and lower surfaces of the felt web such that the yarn segments extending across the felt web upper surface cooperate to form a top yarn face above the felt web upper surface and the yarn segments extending across the felt web lower surface cooperate to form a bottom yarn face below the felt web lower surface; and

a barrier layer joined to the facing fabric so as to confront the bottom yarn face of the facing fabric.

40. The incontinent pad of claim 39 further comprising adhesive attaching the barrier layer to the bottom yarn face.

41. The incontinent pad of claim 39 further comprising edge stitching attaching the barrier layer to the bottom yarn face.

42. The incontinent pad of claim 39 wherein the barrier layer includes a fluid barrier ply and a fabric ply.

43. The incontinent pad of claim 39, the felt web of the stitch bonded facing fabric including first and second felt layers being adjacent to one another to define the felt web, the upper surface of the web being defined by an upper side of the first felt layer, the lower surface of the web being defined by a lower side of the second felt layer, the stitch bonded yarns extending through both felt layers.

44. The incontinent pad of claim 39 further comprising a scrim layer in the stitch bonded facing fabric and being interposed between one of the surfaces of the felt web and the yarn segments extending thereacross.

45. The incontinent pad of claim 44, the scrim layer being interposed between the felt web lower surface and the yarn segments extending thereacross.

46. The incontinent pad of claim 39 wherein the yarn segments extending across the felt web upper surface of the stitch bonded facing fabric form underlaps.

47. The incontinent pad of claim 39 wherein the yarn segments extending across the felt web lower surface of the stitch bonded facing fabric form overlaps.

48. The incontinent pad of claim 39 wherein the yarns of the stitch bonded facing fabric are stitched in a flat stitch construction across the felt web upper surface.

49. The incontinent pad of claim 39 wherein the yarns of the stitch bonded facing fabric are stitched in a loop knit construction across the felt web upper surface to define a plurality of yarn loops in the fabric top.

50. The incontinent pad of claim 39 wherein the yarns of the stitch bonded facing fabric are hydrophobic.

51. A fluid retaining fabric comprising:

a felt web having an upper surface and a lower surface, the felt being adapted to retain fluid therein; and

a plurality of stitch bonding yarns repeatedly extending through the felt web with yarn segments extending across both the upper and lower surfaces of the felt web such that the yarn segments extending across the felt web upper surface cooperate to form a top yarn face above the

felt web upper surface and the yarn segments extending across the felt web lower surface cooperate to form a bottom yarn face below the felt web lower surface, the stitch bonding yarns being hydrophobic whereby to assist in wicking fluid into the felt web.

5     52. The fluid retaining fabric of claim 51 further comprising a scrim layer interposed between one of the surfaces of the felt web and the yarn segments extending thereacross.

53. The fluid retaining fabric of claim 51 wherein the yarn segments extending across the felt web upper surface form underlaps.

10     54. The fluid retaining fabric of claim 51 wherein the yarn segments extending across the felt web lower surface form overlaps.

15     55. The fluid retaining fabric of claim 51 wherein the yarns are stitched in a flat stitch construction across the felt web upper surface.

56. The fluid retaining fabric of claim 51 wherein the yarns are stitched in a loop knit construction across the felt web upper surface to define a plurality of yarn loops in the fabric top.

20     57. The fluid retaining fabric of claim 51 wherein the yarns are continuous filaments.



58. A stitch bonded facing fabric comprising:

a first layer of felt having hydrophobic properties and further having an outer surface; and

a plurality of stitch bonding yarns repeatedly extending through the first layer of felt with

yarn segments extending across the outer surface of the layer of felt, such that the yarn segments

extending across the felt layer outer surface cooperate to form a yarn face above the felt layer

outer surface.

59. The stitch bonded facing fabric of claim 58 further comprising a second layer of felt

adjacent the first layer and having the stitch bonding yarns repeatedly extending therethrough.

60. The stitch bonded facing fabric of claim 58 further comprising a scrim layer interposed  
between the felt layer outer surface and the yarn segments extending thereacross.

61. The stitch bonded facing fabric of claim 58 wherein the yarn segments extending across  
the felt web outer surface form underlaps.

62. The stitch bonded facing fabric of claim 58 wherein the yarns are stitched in a flat stitch  
construction across the felt web outer surface.

63. The stitch bonded facing fabric of claim 58 wherein the yarns are stitched in a loop knit  
construction across the felt web outer surface to define a plurality of yarn loops.

64. The stitch bonded facing fabric of claim 58 wherein the yarns are hydrophobic.

65. A stitch bonded facing fabric comprising:

a first layer of felt having hydrophilic properties and further having an outer surface; and

a plurality of stitch bonding yarns repeatedly extending through the first layer of felt with yarn segments extending across the outer surface of the layer of felt, such that the yarn segments extending across the felt layer outer surface cooperate to form a yarn face above the felt layer outer surface.

66. The stitch bonded facing fabric of claim 65 further comprising a second layer of felt adjacent the first layer and having the stitch bonding yarns repeatedly extending therethrough.

67. The stitch bonded facing fabric of claim 65 further comprising a scrim layer interposed between the felt layer outer surface and the yarn segments extending thereacross.

68. The stitch bonded facing fabric of claim 65 wherein the yarn segments extending across the felt web outer surface form overlaps.

69. The stitch bonded facing fabric of claim 65 wherein the yarns are hydrophobic.

70. An incontinent pad comprising:

a facing fabric including a first layer of felt having hydrophobic properties and further having an outer surface, and a plurality of stitch bonding yarns repeatedly extending through the first layer of felt with yarn segments extending across the outer surface of the layer of felt, such that the yarn segments extending across the felt layer outer surface cooperate to form a yarn face above the felt layer outer surface; and

a barrier layer joined to the facing fabric.

71. The incontinent pad of claim 70, the facing fabric further including a second layer of felt adjacent the first layer and having the stitch bonding yarns repeatedly extending therethrough.

72. The incontinent pad of claim 70 further comprising adhesive attaching the barrier layer to the facing fabric.

73. The fluid-retaining fabric of claim 70 further comprising edge stitching attaching the barrier layer to the facing fabric.

74. The incontinent pad of claim 70 wherein the barrier layer includes a fluid barrier ply and a fabric ply.

75. The incontinent pad stitch of claim 70 further comprising a scrim layer in the facing fabric and being interposed between the felt web outer layer and the yarn segments extending thereacross.

5 76. The incontinent pad of claim 70 wherein the yarn segments extending across the felt web outer surface of the facing fabric form underlaps.

77. The incontinent pad of claim 70 wherein the yarns of the facing fabric are stitched in a flat stitch construction across the felt web outer surface.

10 78. The incontinent pad of claim 70 wherein the yarns of the facing fabric are stitched in a loop knit construction across the felt web outer surface to define a plurality of yarn loops.

15 79. The incontinent pad of claim 70 wherein the yarns of the facing fabric are hydrophobic.

80. An incontinent pad comprising:  
a facing fabric including a first layer of felt having hydrophilic properties and further  
having an outer surface, and a plurality of stitch bonding yarns repeatedly extending through the  
first layer of felt with yarn segments extending across the outer surface of the layer of felt, such  
20 that the yarn segments extending across the felt layer outer surface cooperate to form a yarn face  
above the felt layer outer surface; and  
a barrier layer joined to the facing fabric.

81. The incontinent pad of claim 80, the facing fabric further including a second layer of felt adjacent the first layer and having the stitch bonding yarns repeatedly extending therethrough.

5 82. The incontinent pad of claim 80 further comprising adhesive attaching the barrier layer to the facing fabric.

83. The fluid-retaining fabric of claim 80 further comprising edge stitching attaching the barrier layer to the facing fabric.

10 84. The incontinent pad of claim 80 wherein the barrier layer includes a fluid barrier ply and a fabric ply.

15 85. The incontinent pad of claim 80 further comprising a scrim layer in the facing fabric and being interposed between the felt web outer layer and the yarn segments extending thereacross.

86. The incontinent pad of claim 80 wherein the yarn segments extending across the felt web outer surface of the facing fabric form overlaps.

87. The incontinent pad of claim 80 wherein the yarns of the facing fabric are hydrophobic.

## PATENT

### **REISSUE DECLARATION, POWER OF ATTORNEY, AND PETITION**

As the below named inventors, we hereby declare that: Our residences, post office addresses and citizenships are as stated below next to our names, and we believe we are the original, first and joint inventors of the subject matter which is described and claimed in Letters Patent Number, 5,902,757 entitled **STITCH BONDED FABRIC AND FLUID-RETAINING FABRIC MADE THEREWITH**, granted on May 11, 1999, and in the foregoing specification, for which invention we solicit a reissue patent.

### **ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR**

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims.

We hereby acknowledge the duty to disclose to the United State Patent and Trademark Office all information known to us to be material to patentability as defined in Title 37, Code of Federal Regulations §1.56.

### **STATEMENT OF INOPERATIVENESS OR INVALIDITY OF ORIGINAL PATENT 37 CFR § 1.175**

We believe the original patent to be partly invalid or inoperative by reason of our claiming less than we had a right to claim in U.S. Patent No. 5,902,757 ("the original patent"). Claims 1-29 as issued in the original patent do not claim the invention as broadly as we believe we are entitled to claim it, and claims of the scope of new claims 30-87 are needed to provide the scope of protection for the invention described in the specification which we believe we are entitled to secure. All errors which are being corrected in the

present reissue application up to the time of filing of this declaration arose without any deceptive intention on our part.

Claims 1-22 of the original patent are directed to a stitch bonded facing fabric having a felt web (of one or more layers), and specify certain hydrophobic and hydrophilic properties of the felt web. Claims 23-29 of the original patent are directed to a fluid-retaining fabric having such a stitch bonded facing fabric. All of the claims of the original patent further are directed to their respective fabrics including a plurality of stitch bonding yarns which repeatedly extend through the felt web with yarn segments extending across both the upper and lower surfaces of the felt web to form yarn faces above and below the felt web. It was not appreciated at the time of filing, nor through the prosecution of the application, that a stitch bonded facing fabric, or a fluid-retaining fabric including a stitch bonded facing fabric, focused more broadly on just one of the yarn faces and without necessarily focusing on either or both of the hydrophobic and hydrophilic properties of the felt web was in and of itself novel, regardless of the hydrophobic and/or hydrophilic properties of the web.

In view of the foregoing, we are presenting literally broader claims to which we are entitled and which were not previously pursued due to errors as above described. We are presenting new claims 30-87 as discussed below. These claims are necessary to secure the protection to which we are entitled.

### Claims 30-38

New independent claim 30 is directed to a stitch bonded facing fabric similar to original patent claim 12, but without regard to the hydrophobic and/or hydrophilic properties of the felt web. Support for this claim is found in the specification of the original patent at col. 2, ll. 40-45 and 48-65, for example. New dependent claims 31-36 correspond to the subject matter of original patent claims 13-18, and new dependent claim 38 corresponds to the subject matter of original patent claim 20. New dependent claim 37 adds to claim 30 that the felt web includes first and second felt layers, support for which is found, for example, at col. 2, ll. 40-41 of the specification of the original patent.

### Claims 39-50

New independent claim 39 is directed to an incontinent pad including the stitch bonded facing fabric as set forth in claim 30, plus a barrier layer joined thereto, and is similar to original patent claim 23 without regard to the hydrophobic/hydrophilic properties of the felt. Further support for claim 39 is found, for example, at col. 3, ll. 23-26 of the specification of the original patent. New dependent claims 40 and 41 correspond to the subject matter of original patent claims 24 and 29, and set forth adhesive or stitching to attach the barrier layer, further support for which is found, for example, at col. 3, ll. 29-35 of the original patent specification. New dependent claim 42 corresponds to the subject matter of original patent claim 26.

New dependent claim 43 defines the felt web as including first and second felt layers of the stitch bonded facing fabric as discussed in connection with new claim 37 above.



New dependent claim 44 adds the scrim layer which was the subject matter of original patent claims 2 and 13. New dependent claim 45 specifies the positioning of the scrim layer, support for which is found, for example, at col. 3, ll. 49-50 of the specification of the original patent. New dependent claims 46-50 correspond, respectively, to the subject matter of original patent claims 14 and 16-19.

#### Claims 51-57

New independent claim 51 is directed to a fluid-retaining fabric and corresponds to original patent claim 23, without regard to the hydrophobic/hydrophilic properties of the felt, but specifying that the stitch bonding yarns are hydrophobic to assist in wicking fluid into the felt web. Support for new claim 51 is found, for example, at col. 2, ll. 40-45 and col. 3, ll. 2-10 and 20-21 of the specification of the original patent.

New dependent claims 52-57 add subject matter corresponding to the subject matter of original patent claims 13, 14, 16-18, and 21.

#### Claims 58-64

New independent claim 58 is directed to a stitch bonded fabric similar to claim 1, but directed to the layer of hydrophobic felt with the stitch bonding yarns forming the yarn face on the outer surface of the layer of felt or another yarn face. Support for new claim 58 is found, for example, at col. 2, ll. 34-35, 43-44 and 48-50.

New dependent claim 59 depends from claim 58 and further recites a second layer of felt, but without regard to the hydrophobic or hydrophilic nature of that second layer. Support for new claim 59 is found, for example at col. 2, ll. 35-36.

New dependent claim 60 adds a scrim layer between the yarns and felt surface, support for which is found at col. 3, ll. 46-49. New dependent claims 61-64 correspond in subject matter to original patent claims 3 and 5-8, respectively.

#### Claims 65-69

New independent claim 65 is similar to original patent claim 1 (and new claim 58) but focuses on the layer of hydrophilic felt rather than the hydrophobic felt. Support for new claim 65 is found, for example, at col. 2, ll. 34, 35-36, 48-49, and 50-52. New dependent claim 66 further recites a second layer of felt, but without regard to the hydrophobic or hydrophilic nature of that second layer. Support for new claim 66 is found, for example, at col. 2, ll. 34-35 of the original patent specification; new dependent claim 67 adds a scrim layer between the yarns and felt surface, support for which is found at col. 3, ll. 46-48 and 49-50; and new dependent claims 68 and 69 correspond in subject matter to original patent claims 5 and 8.

#### Claims 70-79

New independent claim 70 is directed to an incontinent pad including the facing fabric of claim 58 and a barrier layer joined to the facing fabric, support for which is provided by the same support as discussed above in connection with new claims 39 and 50.

New dependent claim 71 further recites a second layer of felt without regard to the hydrophobic or hydrophilic nature of that second layer. Support for new claim 71 is found, for example at col. 2, ll. 35-36.

New dependent claims 72-74 correspond to the subject matter of new claims 40-42.

New dependent claim 75 adds a scrim layer between the yarns and the felt, support for which is found, for example, at col. 3, ll. 46-49 of the specification of the original patent.

New claims 76-79 correspond to the subject matter of original patent claims 3, 6, 7, and 9, respectively.

#### Claims 80-87

New independent claim 80 is directed to an incontinent pad comprising the facing fabric of new claim 65 with a barrier layer joined to that facing fabric support for which is also provided by the support for new claims 39 and 65 as described above.

New dependent claim 81 depends from claim 80 and further recites a second layer of felt without regard to the hydrophobic or hydrophilic nature of that second layer. Support for new claim 81 is found, for example at col. 2, ll. 34-35.

New dependent claims 82-84 correspond to the subject matter of new claims 40-42.

New dependent claim 85 adds a scrim layer between the yarns and the felt. Support for which is found at col. 3, ll. 46-48 and 49-50.

New dependent claims 86 and 87 correspond to the subject matter of original patent claims 5 and 9.

We now realize that we were mistaken in believing that the claims of our U.S. Patent No. 5,902,757 provided satisfactory protection for our invention. As is apparent through the foregoing, the claiming of less than we had a right to claim arose through error without any deceptive intention on our part.

### **POWER OF ATTORNEY**

I hereby appoint John D. Poffenberger (R. No. 20,245), Bruce Tittel (R. No. 22,324), Donald F. Frei (R. No. 21,190), David J. Josephic (R. No. 22,849), A. Ralph Navaro, Jr. (R. No. 23,050), David S. Stallard (R. No. 25,930), J. Robert Chambers (R. No. 25,448), Gregory J. Lunn (R. No. 29,945), Kurt L. Grossman (R. No. 29,799), Clement H. Luken, Jr. (R. No. 32,742), Thomas J. Burger (R. No. 32,662), Gregory F. Ahrens (R. No. 32,957), Wayne L. Jacobs (R. No. 35,553), Kurt A. Summe (R. No. 36,023), Kevin G. Rooney (R. No. 36,330), Keith R. Haupt (R. No. 37,638), Theodore R. Remaklus (R. No. 38,754), Thomas W. Humphrey (R. No. 34,353), Joseph R. Jordan (R. No. 25,686), C. Richard Eby (R. No. 25,854), David E. Pritchard (R. No. 38,273), David H. Brinkman (R. No. 40,532), J. Dwight Poffenberger, Jr. (R. No. 35,324), Beverly A. Lyman (R. No. 41,961), A. Ralph Navaro III (R. No. P46,207), Scott A. Stinebruner (R. No. 38,323), Kristi L. Davidson (R. No. 44,643), P. Andrew Blatt (R. No. 44,540), David E. Franklin (R. No. 39,194), Herbert C. Brinkman (R. No. 16,955), all of Wood, Herron & Evans, L.L.P., 2700 Carew Tower, 441 Vine Street, Cincinnati, OH 45202-2917, telephone no. (513) 241-2324, my attorneys, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith. Address all correspondence and telephone calls to

Kurt L. Grossman, Esq.  
Wood, Herron & Evans, L.L.P.  
2700 Carew Tower  
441 Vine Street  
Cincinnati, OH 45202-2917  
Telephone (513) 241-2324

Wherefore we pray that Letters Patent be granted to us for the invention or discovery described and claimed in the foregoing specification and claims, and we hereby subscribe our names to the foregoing specification and claims, declaration, power of attorney, and this petition.

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole or First Inventor Randolph A. Stern

Inventor's Signature *Randolph A. Stern* Date 4/18/2000

City and State of Residence New York, New York Citizenship USA

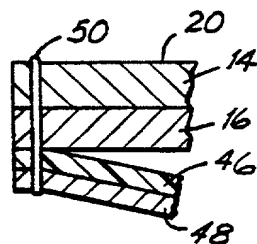
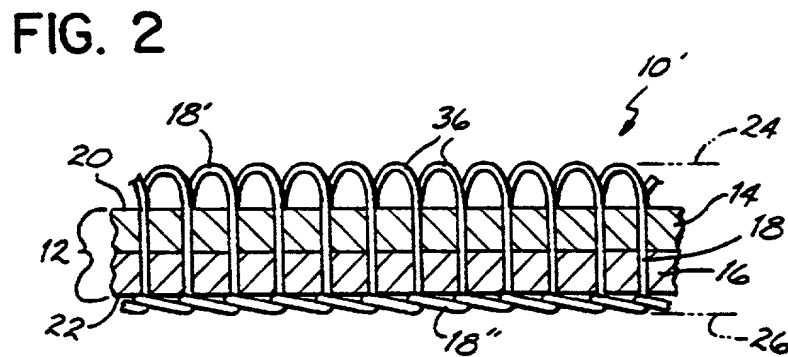
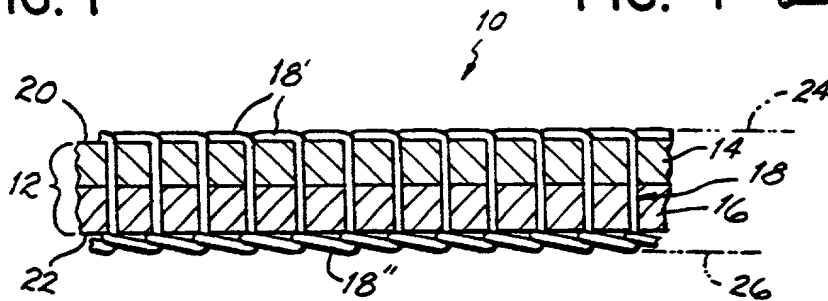
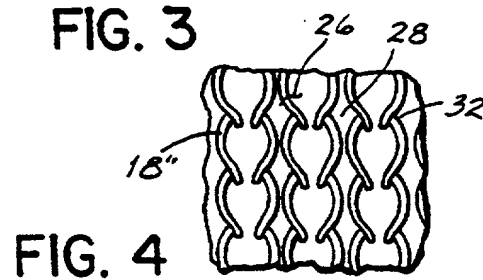
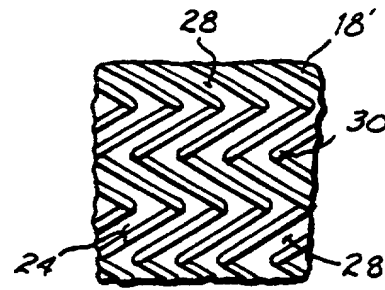
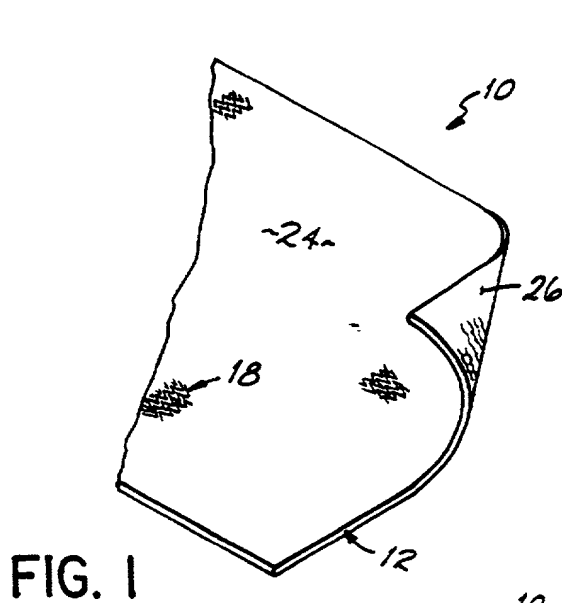
Post Office Address 124 West 79<sup>th</sup> Street, Apt. 1A, New York, New York 10024

Full Name of Second Inventor Michael N. Byles

Inventor's Signature *Michael Byles* Date 4-4-2000

City and State of Residence Jamestown, North Carolina Citizenship JAMAICA  
~~USA~~

Post Office Address 3308 Peninsula Drive, Jamestown, North Carolina 27282



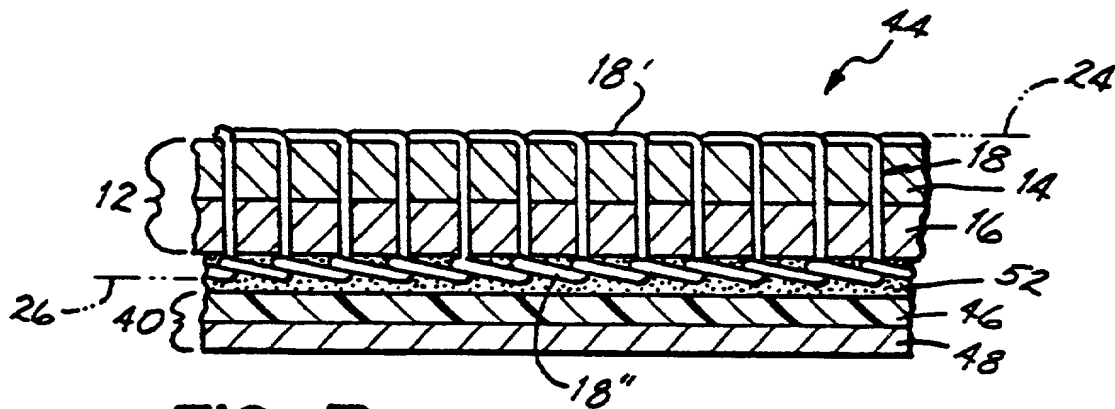


FIG. 7

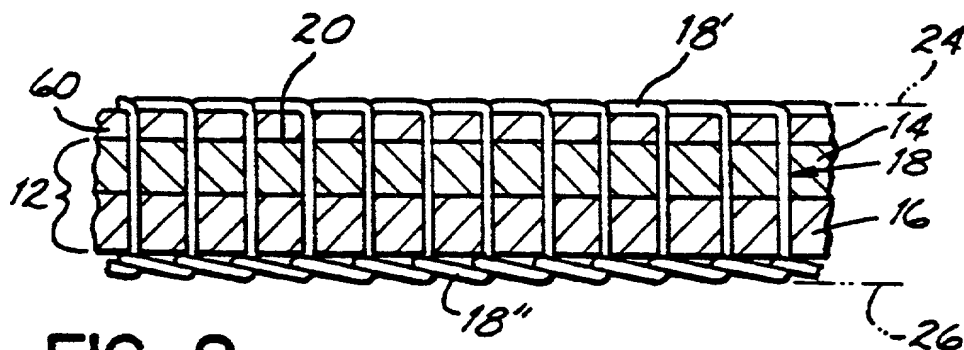


FIG. 8